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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,082	10/28/2003	James Anthony Norris	HAR65 032	3475

7590  
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Duane Morris LLP  
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02/15/2007

EXAMINER
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TRAN, KHAI

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/694,082

Applicant(s)

NORRIS, JAMES ANTHONY

Examiner

KHAI TRAN

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-30 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 2/04/2004 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered. There is no USPTO -1449 Form provided.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 4, 5-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent (U.S. Pat. 6,944,206) in view of Scarpa (US 2003/0128656 A1).

Regarding claim 1, Dent discloses a method for improving the bandwidth efficiency of a continuous phase modulation signal comprised of plural symbols over a communication channel as shown in Figure 2B, comprising the steps of: coding an input data stream (a source coding 50, and a channel coding 52); modulating (57) a carrier frequency with the coded input data stream as a constant envelope continuous phase modulation waveform; and converting (up-converting to carrier frequency 59) the constant envelope continuous phase modulation waveform into a non-constant envelope continuous phase modulation waveform thereby improving the bandwidth of the signal. Dent fails to disclose the step of converting including interpolation of a path between constellation points along a chord connecting successive constellation points.

Scarpa discloses a step of converting including interpolation of a path between constellation points along a chord connecting successive constellation points (see [0008] showing an example of the result of low pass filtering to interpolate between pilot data points to generate a complete set of channel estimation information for one symbol time period. The FIG. 2 illustration may be the result of, e.g., performing interpolation on the pilots of the first row of data). It would have been obvious to one having ordinary skill in the art at the time the invention was made to convert the constant envelope continuous phase modulation waveform into a non-constant envelope continuous phase modulation waveform by interpolating the a path between constellation points along a chord connecting successive constellation points as taught by Scarpa into the teaching of Dent in order to reduce noise corruption and remove multipath other distortion introduced by the communication channel.

Art Unit: 2611

Regarding claim 2, Dent discloses wherein the coding is trellis coding (col. 2, line 59 to col. 3, line 5).

Regarding claim 4, Dent discloses wherein the non-constant envelope phase modulation waveform has modulation indices (col. 2, lines 18-28).

Regarding claims 5-6, Dent discloses a step of interleaving the coded input data stream (an interleaver 210, see Figure 6A). The use of a filter is well known in the transmitter before transmitting signal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the filter in the teachings of Dent and Sparpa in order to remove error signal before transmitting signal to a receiver.

Claims 7-8 are similar to claim 1. Therefore, claims 7-8 are rejected under a similar rationale.

Regarding claims 9-10, Dent discloses the step of varying a complex amplitude comprising the step of attenuating the signal (col. 2, line 59 to col. 3, line 5). Dent and Scarpa fail to disclose a step of amplifying signal. The use of the amplifier in the transmitter is well known in the art to increase the power signal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the amplifier in the transmitter into the teachings of Dent and Scarpa in order to reduce the distorted signal.

Claims 11-15 are similar to claims 1-2, 4, 7. Therefore, claims 11-15 are rejected under a similar rationale.

Art Unit: 2611

Claims 16-25 are similar to claims 1, 2, 4, 7. Therefore, claims 16-25 are rejected under a similar rationale.

Claims 26-30 are similar to claims 1, 2, 4, 7. Therefore, claims 26-30 are rejected under a similar rationale.

***Allowable Subject Matter***

2. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. The following is a statement of reasons for the indication of allowable subject matter: Dent and Scarpa fail to disclose a path is a function of an angle between the successive constellation points,

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

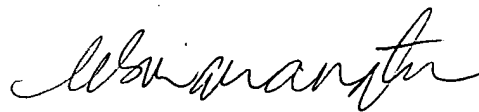
Khoini-Poorfard (US 2002/0168026 A1) discloses multi-protocol modulator.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAIR TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



KHAI TRAN  
Primary Examiner  
Art Unit 2611

*KT*  
*February 12, 2007*